
Interface specifications

Meridian 1 interface

The Multi-Channel Data System (MCDS) shelf containing HSDCs interfaces with Meridian 1 by the QPC311 Data Line Card (DLC) or QPC432 Four Port Data Line Card (Four Port DLC). A connecting loop wire gauge selection is provided on the HSDC. The selection plugs (J3 for Port C, J4 for Port A) select either 22/24-gauge inside wire or 24/26-gauge outside wire. J3 and J4 are not accessible from the faceplate (see Figure 2). To select wire gauge, remove the HSDC card from the MCDS shelf.

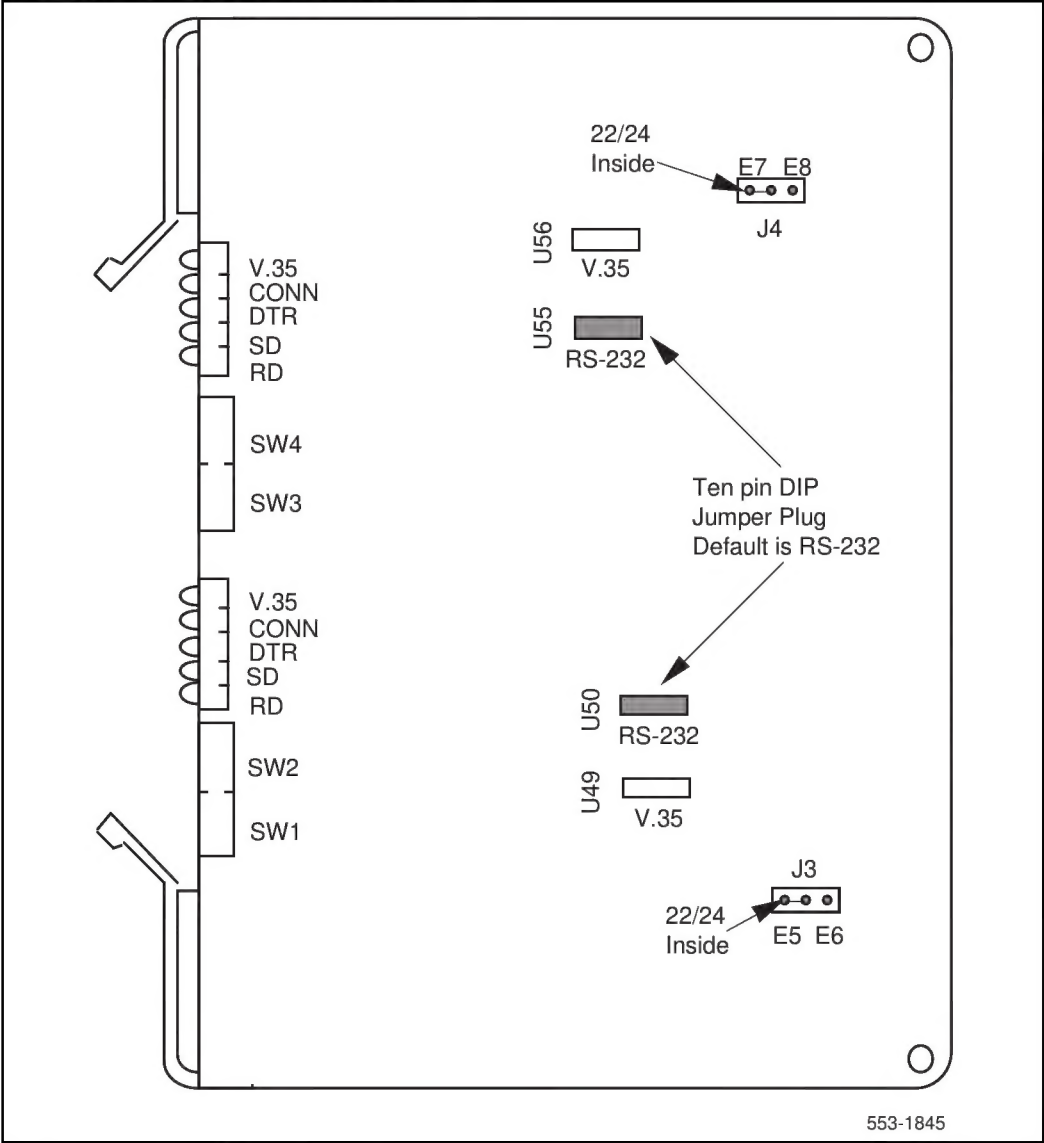
Note: The QPC432 replaces the QPC311 DLC, which is available for repair only and cannot be ordered as new equipment.

RS-232 interface

For RS-232 interface configuration, place a 10-pin DIP jumper plug on the QPC918 board in the RS-232 position.

When the HSDC is used as an RS-232 interface unit, the HSDC can replace an Asynchronous/Synchronous Interface Module (ASIM) and Asynchronous Interface Card (AIC) completely. The HSDC meets the DCE and DTE interface requirements of the EIA RS-232-C standard.

Figure 2
High Speed Data Card jumper locations



A 10-pin DIP jumper plug must be inserted in the correct socket of the HSDC, as shown in Table 2, to support RS-232-C or V.35 interfaces.

Table 2
HSDC interface selection

Port	Interface Type	Install 10-pin DIP at Location
Port A	RS-232-C	U55
	V.35	U56
Port C	RS-232-C	U50
	V.35	U49

Table 3 shows the EIA leads supported by the HSDC and Multi-Channel Data System (MCDS) Port A or Port C.

Table 3
EIA signals supported by the HSDC (Part 1 of 2)

Pin No.	Description	CKT	From	To
Ground Leads				
1 (Note 1)	Protective Ground	AA	—	—
7	Signal Ground (SG)	AB	—	—
Control Leads				
4	Request To Send (RTS)	CA	DTE	HSDC
5	Clear To Send (CTS)	CB	HSDC	DTE
6	Data Set Ready (DSR)	CC	HSDC	DTE
8	Carrier Detect (CD)	CF	HSDC	DTE
15	Serial Clock Receive (SCR)	DD	HSDC	DTE
17	Serial Clock Transmit (SCT)	DB	HSDC	DTE

Table 3
EIA signals supported by the HSDC (Part 2 of 2)

Pin No.	Description	CKT	From	To
20	Data Terminal Ready (DTR)	CD	DTE	HSDC
22	Ring Indicator (RI)	CE	HSDC	DTE
23	Data Rate Selector	CH/CI	—	—
24	Ext Transmit Clock (SCTE)	DA	DTE	HSDC
25 (Note 2)	Busy out	BO	DTE	HSDC
Data Leads				
2	Transmit Data (TD)	BA	DTE	HSDC
3	Receive Data (RD)	BB	HSDC	DTE
Note 1: Pin 1 is connected to the MCDS shelf frame. Note 2: Pin 25 is connected to an RS-232 receiver on the HSDC but is ignored by the HSDC.				

V.35 interface

For V.35 interface configuration, remove a 10-pin DIP jumper plug on the HSDC from the RS-232 socket and install it in the V.35 socket.

The HSDC V.35 interface conforms electrically to the CCITT V.35 standard and mechanically to the ISO 2110 (DB-25). When the HSDC is used as a V.35 interface unit, use an adapter cable to convert the ISO 2110 connector on the MCDS backplane into an ISO 2593 (34-pin rectangular connector).

The HSDC is shipped from the factory configured for the RS-232 interface. The V.35 is configured only when required by the application.

Table 4 shows the V.35 (CCITT) leads supported by the HSDC and MCDS Port A or Port C.

Table 4
V.35 (CCITT) signals supported by the HSDC and MCDS (Part 1 of 2)

Pin No.	Description	EIA Signals	Abbrev.	CCITT	DB-25 Pin No.	V.35 Pin No.
1	Protective Ground (Note 2)	AA	DG	101	1	A
2	Transmitted Data A	BA	SDA	103A	2	P
3	Receive Data A	BB	RDA	104A	3	R
4	Request to Send	CA	RTS	105	4	C
5	Clear to Send	CB	CTS	106	5	D
6	Data Set Ready	CC	DSR	107	6	E
7	Signal Ground	AB	SG	102	7	B
8	Carrier Detect	CF	CD	109	8	F
9	No connection	—	—	—	9	CC
10	No connection	—	—	—	10	L
11	— (Note 3)	—	—	—	11	K
12	Receive Signal Element Timing B	SBA	SCRB	115B	12	X
13	Transmitted Data B	SBB	SDB	103B	13	S
14	Transmitted Signal B Element Timing	—	SCTB	114B	14	AA
15	Transmitter Signal A Element Timing	—	SCTA	114A	15	Y
16	Receive Data B	—	RDB	104B	16	T
17	Receiver Signal Element Timing A	—	SCRA	115A	17	V
18	No connection	—	—	—	18	M

Table 4
V.35 (CCITT) signals supported by the HSDC and MCDS (Part 2 of 2)

Pin No.	Description	EIA Signals	Abbrev.	CCITT	DB-25 Pin No.	V.35 Pin No.
19	No connection	—	—	—	19	HH
20	Data Terminal Ready	CD	DTR	108.2	20	H
21	No connection	—	—	—	21	EE
22	Ring Indicator	CE	RI	125	22	J
23	Transmitter Signal Element Timing A	CH/CI	SCTEA	113B	23	W
24	Transmitter Signal Element Timing B	DA	SCTEB	113A	24	U
25	Busy Out (Note 3)	—	—	—	25	MM
Note 1: Leads not specified are not used. Note 2: Pin 1 is connected to the MCDS shelf frame. Note 3: When the HSDC is configured for the V.35 interface, pins 11 and 25 are still connected to an RS-232-C receiver.						

Data transmission rates

The data rates the HSDC supports are listed in Table 5. These speeds can be set by four switches labeled D0, D1, D2, and D3 on the faceplate.

In the asynchronous mode, there is one stop bit for all speeds except for 110 bps. There are two stop bits at 110 bps. The HSDC operates only in full duplex mode with 8 bits, including parity. The HSDC supports the asynchronous speeds of 110, 150, 300, 600, 1200, 2400, 4800, 9600, or 19200 bps. The HSDC will always autobaud to the DTE baud rate.

In the asynchronous mode, when the HSDC is first powered up, the default speed of either 1200, 2400, 4800, 9600, or 19200 is selected. This speed is determined by the D0, D1, D2, and D3 switch settings on the HSDC faceplate. After autobauding, the HSDC remembers the terminal speed (current speed). If the HSDC does not autobaud, it remembers the previous speed. If the switch settings are not set to one of the five speeds, 9600 bps is used as a default.

In the synchronous mode, the speeds available are listed in Table 5. The synchronous speeds are determined by the D0, D1, D2, and D3 switch settings. The speed can be changed only in the idle state.

Table 5
Data transmission rates and switch settings

Asynchronous Mode (bps)	Synchronous Mode (bps)	Faceplate Switch Settings (SW1 or SW3)			
		D3	D2	D1	D0
—	—	OFF	OFF	OFF	OFF
—	—	OFF	OFF	OFF	ON
1200	1200	OFF	OFF	ON	OFF
—	3600	OFF	ON	OFF	OFF
4800	4800	OFF	ON	OFF	ON
—	7200	OFF	ON	ON	OFF
9600	9600	OFF	ON	ON	ON
—	—	ON	OFF	OFF	ON
19200	19200	ON	OFF	ON	OFF
—	38400	ON	OFF	ON	ON
—	40800	ON	ON	OFF	OFF
—	48000	ON	ON	OFF	ON
—	56000	ON	ON	ON	OFF
—	64000	ON	ON	ON	ON
Note: In the asynchronous mode, incoming data calls operating at speeds other than 110, 150, 300, 600, 1200, 2400, 4800, 9600, or 19200 bps will be disconnected and an appropriate message sent to the user screen. Each port will adapt to the data rate of the calling Meridian SL-1 data module.					

Data code and parity

The HSDC supports asynchronous data terminals using 7 bit ASCII code, 1 or 2 stop bits, and odd, even, space, or mark parity.

In asynchronous mode, the HSDC uses the autobaud and autoparity feature to automatically detect the speed and parity of the DTE. The procedure for autobaud and autoparity is as follows:

- The HSDC detects the speed of the carriage-return (<CR>) ASCII character. If the parity of the terminal matches the default (8 bit, space parity), the HSDC echoes legible prompts on the screen. Otherwise illegible prompts appear on the screen. To re-autoparity, enter period (.) and a carriage-return (<CR>). After the HSDC detects the parity, legible prompts will be echoed on the screen. This is the standard procedure used on all other SL-1 data products.
- The HSDC goes back to default mode under the following conditions:
 - The DTE power goes from ON to OFF, then returns to ON
 - After a Control Z, Break, DTR OFF, or call disconnection from the far end

Re-downline loading

The HSDC is capable of accepting re-downline loading of the configuration parameters in the asynchronous mode.

Power requirements

The HSDC is powered from an MCDS power supply. The power requirements per card are shown below.

Voltage	Tolerance	Current	
		Nominal	Maximum
+5 V dc	±5%	1.4 amp	2.1 A
+12 V dc	±10%	24 mA	0.2 A
−9 V dc	±10%	30 mA	0.2 A
+9 V dc	±10%	30 mA	0.2 A

A total of 1.7 A is required from the MCDS 110 V ac power receptacle when the MCDS shelf is fully loaded with eight HSDCs.

Environmental

The HSDC is designed to operate without degradation under the following conditions.

Specification	Operating	Storage
Ambient temperature	0 to 50°C	−40 to 70°C
Relative humidity (noncondensing)	10 to 95%	0 to 95%

Reliability

The HSDC has a predicted mean time between failure (MTBF) of 29.3 years at 40°C.